



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

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Fax 613 632-5246

**EFS Washer, Washer Design**

**K**

**Job Sheet 216494**

Accounting Job SE CAD 10000000



**Part No:** EFS Washer, Washer Design K

**Job Qty:** 25 pcs

**Part Name:** AW169 EFS Washers, Design K



**Part Weight:** 0 lbs

**Status:** New

**Priority:** Medium

**Job Created:** 12/10/20

**Job Tracking No:**

**Due Date:** 12/11/20

**Created By:** Marie Lajeunesse

**Type:** R+D

**Description:**

**Note:** EFS WASHER REV.A IPP REV:A 20.12.10 NEW ISSUE DD VERF:JFS

**Ship Via:**

### Bill of Materials



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**Container No:** S320174



**Part:** EFS Washer, Washer Design K

**Job No:** 216494

**Serial No/Batch:** S320174

**Revision:** REV.A

**Inspector:**

**Exp Date:**

**Instructions:**

**Date:** 12/11/20

## Job Routing

| Op No | Operation                   | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier    |              | Sign-off                      |
|-------|-----------------------------|--------|------------|----------|-----------|---------|------------------------|--------------|-------------------------------|
|       |                             |        |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier  | Lead Time    |                               |
| 100   | SL-154 - 1                  | 25 pcs | 12/11/20   | 12/11/20 | 0.50      | 3.33    | SL-154 - 1             |              | <i>20/12/11</i>               |
|       |                             |        |            |          |           |         | SL-154 - SCH-S         |              |                               |
| 110   | QC 2                        | 25 pcs | 12/11/20   | 12/11/20 | 0.00      | 0.00    | QC 2 - SCH-B           | <i>QC2-5</i> | <i>20/12/11</i>               |
| 120   | QC 8                        | 25 pcs | 12/11/20   | 12/11/20 | 0.00      | 0.00    | QC 8 - SCH-B           |              | <i>20/12/11</i>               |
| 130   | Packaging 3-1 - Stock - B4B | 25 pcs | 12/11/20   | 12/11/20 | 0.00      | 0.00    | Packaging 3 - 1 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 2 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 3 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 4 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 5 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 6 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 7 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 8 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 9 - B4B  |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 10 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 11 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 12 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 13 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 14 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 15 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 16 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 17 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 18 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 19 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 20 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 21 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 22 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 23 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 24 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 25 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 26 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 27 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 28 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 29 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 30 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 31 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 32 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 33 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 34 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 35 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 36 - B4B |              |                               |
|       |                             |        |            |          |           |         | Packaging 3 - 37 - B4B |              |                               |
| 140   | QC 21 - SA                  | 25 pcs | 12/11/20   | 12/11/20 | 0.00      | 0.00    | QC 21 - SA - SCH-B     |              | <i>21</i> <i>DEC 1 1 2020</i> |

Part Op 100 - 1-Machine as per folio F *N/A*FOLIO REV: *N/A*DWG REV: *A*

2-Depun

Descriptions: 110 - (QC2- Inspect parts off machine FAI/FAIB)

120 - (QC8- Inspect parts - second check)

130 - Identify as per dwg &amp; Stock

140 - (QC21- Final Inspection - Work Order Release)

## Job BOM

| Part / Item        | Component Name                      | Quantity            | Operation      | Container      |
|--------------------|-------------------------------------|---------------------|----------------|----------------|
| MDELINR <i>250</i> | Delrin Round Bar 0.75" Color: Black | .4150 ft (.0166 ea) | 100-SL-154 - 1 | <i>S306076</i> |

**Job Allocations**

| Operation      | Component Part | Required | Inventory | Allocated |
|----------------|----------------|----------|-----------|-----------|
| 100-SL-154 - 1 | MDELRINR0.750  | 0        | 3         | 0         |

**Part Specifications**

Specifications could not be found.

Plex 12/10/20 3:17 PM Dart.lajeunesse.marie

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sequence #: _____                                                                                                                 | QTY Affected : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Preservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |

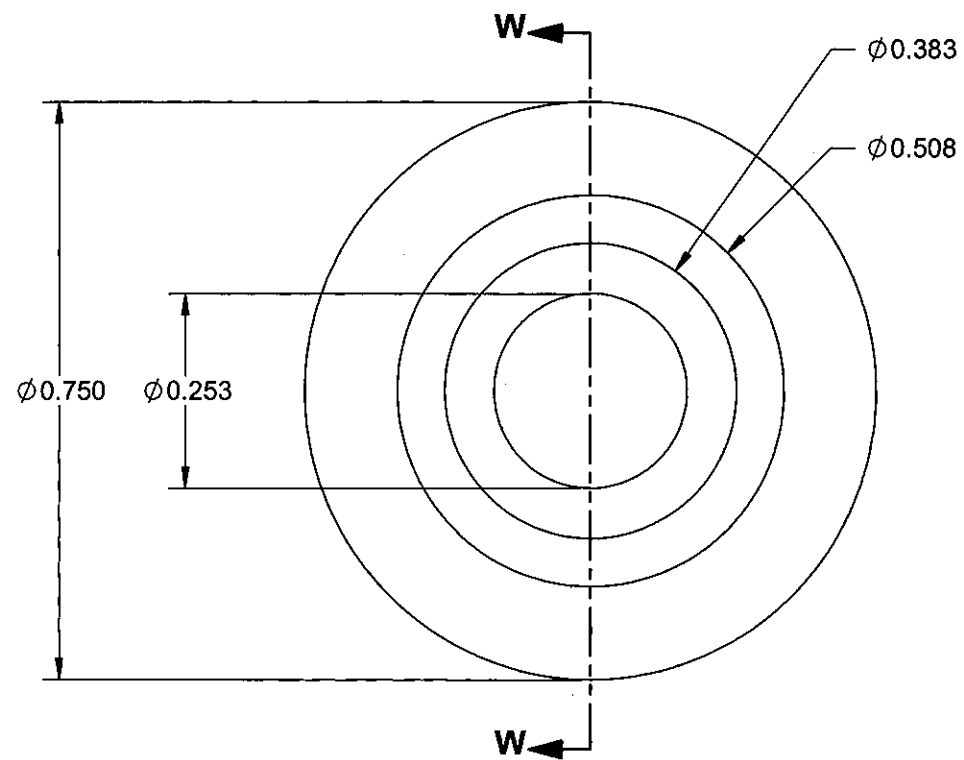


D

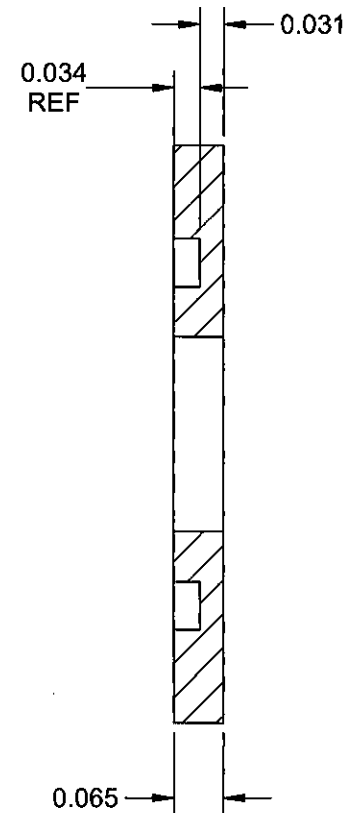
C

B

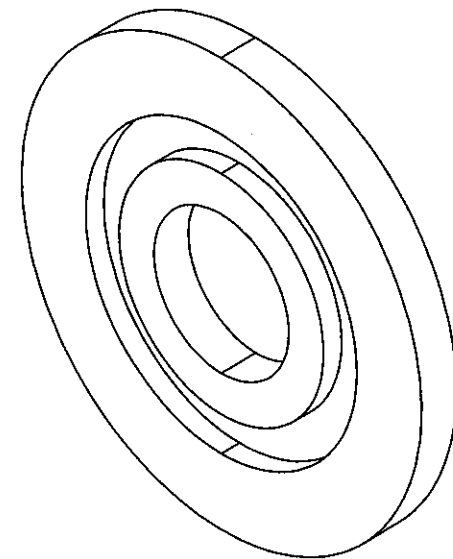
A



**WASHER DESIGN K**



**SECTION W-W**



D

C

B

A

**NOTES:**

- 1) MATERIAL: DELRIN II 150E
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044
- 7) WEIGHT: N/A
- 8) ALL NON DIMENSIONED FEATURES MUST MAINTAIN A TOLERANCE OF +/- 0.005 PER STEP FILE "WASHER DESIGN K REV. A"

|            |          |                                                                                                                                                                                                                                                                          |                |
|------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| DESIGN     |          | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                 |                |
| DRAWN      |          |                                                                                                                                                                                                                                                                          |                |
| CHECKED    |          | DRAWING NO.                                                                                                                                                                                                                                                              | REV. A         |
| MFG. APPR. |          | <b>EFS Washer</b>                                                                                                                                                                                                                                                        | SHEET 10 OF 10 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                    | SCALE          |
| DE APPR.   |          | <b>AW169 EFS Washers</b>                                                                                                                                                                                                                                                 | NTS            |
| DATE       | 20.11.26 | COPYRIGHT © 2020 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |                |

## INSPECTION SHEET

| Rev | Date     | Change    | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| B   | 14.07.31 | New Issue | KJ         |          |